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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/059,940	01/29/2002	Wen Dong Song	66307/JPW/MS	7142

7590 02/13/2004

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EXAMINER
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ELVE, MARIA ALEXANDRA

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 02/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AS

**Office Action Summary****Application No.**

10/059,940

**Applicant(s)**

SONG ET AL.

**Examiner**

M. Alexandra Elve

**Art Unit**

1725

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 December 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 and 25 is/are pending in the application.
- 4a) Of the above claim(s) 15-23 and 25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-14 is/are rejected.
- 7) ☒ Claim(s) 4-7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3 & 7-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Crema et al. (US Pat. 6,468,356).

Crema et al. discloses a method for removing residues of molding material from metal parts of plastic packages of semiconductor devices. The method includes using two laser pulses; the first pulse has a wavelength, which is absorbed by the thicker residues, and the second pulse has a wavelength for thinner or transparent residues. The intensity and duration of the pulses removes the residues. A YAG laser is used with a wavelength of about 1064 nm (infra-red light). Pulse durations are between 6 and 8 ns. The pulse repetition frequency is around 30 Hz. Additionally; other types of lasers may be used. It would be possible to other lasers with wavelengths in the ultraviolet range, that is, between 180 and 700 nm.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 & 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crema et al., as stated above rejection.

Crema et al. does not disclose the use of a CO<sub>2</sub> laser. It is well known in the art that lasers of different types have wide overlaps and hence different types of lasers may be considered functional equivalents. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a CO<sub>2</sub> laser in place of a YAG, because other types of lasers may be used in the Crema et al. cleaning method.

Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crema et al., as stated above rejection and further in view of Werth et al. (US Pat. 4,803,021).

Crema et al. does not disclose fluences of 1000 and 300 mJ/cm<sup>2</sup>. Werth et al. teaches the use of an ultraviolet laser for the treatment of molded surfaces. Fluences used to remove mold residues range from 0.01 to about 1.0 J/cm<sup>2</sup> (10 to 1000 mJ/cm<sup>2</sup>). It would have been obvious to one of ordinary skill in the art at the time of the invention

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to have fluences, as taught by Werth et al. in the Crema et al. system because these are standard ranges for ultraviolet and further they are both directed at removing mold residues.

***Allowable Subject Matter***

Claims 4—6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art does not teach pulses in excess of 1 us or having intensities of 10 kw/cm<sup>2</sup>.

***Response to Amendment***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, applicant's arguments are moot.

**Conclusion**


Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Alexandra Elve whose telephone number is 571-272-1173. The examiner can normally be reached on 6:30-3:00 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on 571-272-1171.

February 9, 2004.

  
M. ALEXANDRA ELVE  
PRIMARY EXAMINER